

DIVAR

Digital Video Recorder with Internal DVD Writer and Bilinx Capability

ARCHITECTURAL AND ENGINEERING SPECIFICATION

Section 282319 - Digital Video Recorders and Analog Recording Devices

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Bosch Security Systems
850 Greenfield Road
Lancaster, PA 17601
Tel. (800) 326-3270
Fax (717) 735-6560
- B. This product shall be manufactured by a firm whose quality system is in compliance with the I.S./ISO 9001/EN 29001, QUALITY SYSTEM.

2.02 DIGITAL VIDEO RECORDER GENERAL DESCRIPTION

- A. The product specified integrates the functionality of a digital video recorder with the functions of a video multiplexer and video switcher/controller into one unit. The DVR allows simultaneous recording and playback of video images and provides overwrite protection of marked video clips to prevent the loss of vital material. The product records images to internal hard drive storage, but is designed to accommodate external storage arrays should customer video storage demands increase in the future. The unit shall also contain an internal DVD writer so that marked video clips may be exported along with a PC archive player program to provide playback and authentication capability when reviewed from a PC. Full remote camera site control is provided via optional system keyboards directly connected to the DVR or from remote viewing PC stations equipped with manufacturer supplied software. The unit shall also be accessible via the Internet Explorer browser to view live or archived video images. The DVR shall provide the capability to communicate with Bosch Bilinx capable cameras allowing the camera to be directly configured from the DVR via the coaxial video cable. The DVR shall be compatible with the Bosch D and G Series Intrusion Panels to accept Bosch CLI command strings.

2.03 DIGITAL VIDEO RECORDER SPECIFICATIONS

- A. The DVR shall record multiple camera signals while simultaneously providing live multiscreen viewing and playback. During playback, video clips may be marked to provide overwrite protection to prevent loss of vital information.
- B. The DVR shall provide a quick-installation, on-screen menu. Any or all cameras may be restricted from operator view while continuing to record to the hard drive. Menus that allow access to recorded video, system configuration setup, and camera restrictions shall be password protected. The DVR shall provide on-screen, context-sensitive help for all topics.
- C. The manufacturer of the specified DVR shall offer the unit in 6, 9, and 16-channel versions with storage capacities of 80GB, 160GB, 320GB, and 600 GB, as the customer application requires.

- D. The images per second rate shall be selectable for each connected camera as follows:
 - 1) The NTSC version DVRs allow selectable image per second (ips) record rates of 30, 15, 10, 7.5, 6, 5, 4, 3, 2, 1, $\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{10}$, 0.
 - 2) The PAL version digital recorders shall allow selectable image per second (ips) record rates of 25, 12.5, 8, 6, 5, 4, 3, 2, 1, $\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{10}$, 0.
- E. The DVR shall provide the following two modes of recording:
 - 1) Continuously record to the disk until it is full, and then start overwriting the oldest data. The unit shall provide overwrite protection of the latest files for a period of 1 day up to 15 weeks. This overwrite protection period is menu selectable during record setup.
 - 2) Record to the disk and provide a warning when the disk is nearly full, and then stop when the disk is full. Display a disk-full alert on the main monitor and sound an alarm beeper. Older recordings must be manually deleted.
- F. The DVR shall provide the following monitor outputs:
 - 1) A main monitor output provides composite video that displays full-screen, quad, or multiscreen live or playback camera pictures. This monitor also sequences cameras in quad format or sequences cameras in a full-screen display. This monitor displays the menu, status messages, events, alarms, and video loss warnings.
 - 2) A secondary monitor composite video output displays a single, full-screen picture of a selected camera or a sequence of full-screen pictures. This monitor also displays alarmed or action detected video and sequences the video in the case of multiple alarms or action.
- G. The DVR shall contain an internal video motion detector function that triggers an alarm when movement within a user-defined area of the image is detected. When motion is sensed, the record rates and quality levels of up to four (4) cameras may be changed.
- H. The DVR shall provide a smart motion search feature that allows retrieval of images, within a selected time frame defined by the user, that contain motion within specified areas of the recorded video.
- I. The DVR shall provide video loss detection to indicate the loss of a video input signal.
- J. The DVR shall have an internal DVD writer that supports DVD+RW, DVD+R, CD-R, and CD-RW media. Marked video clips may be exported along with a PC archive player to the internal DVD writer. All video recordings shall have an encrypted code embedded in them that allows authentication of the recorded images by ensuring that video and associated data have not been tampered with.
- K. The DVR specified shall store up to six (6) different system profiles that contain configuration settings for recording data, handling alarms, setting pre-positions for up to four controllable cameras, and access restriction that determine system behavior when that profile is active. Profiles may be activated by an input alarm switch or automatically by date and time. The DVR shall allow different pre-positions for up to four controllable cameras to be adopted upon the activation of a different profile.
- L. The DVR shall provide a function that blocks the playback from any or all

cameras after a specified period of time. When the specified time has elapsed, no recordings before that time can be played back from the selected camera(s). Programming of the block time ranges from No Blocking at all up to 31 days.

- M. In addition to the internal disk storage capacity of the recorder, an external SCSI-2 port shall allow Bosch DVAD or DVAS external storage arrays to provide mass storage of video images.
- N. The DVR shall provide an RS232 serial port to be used for configuration and service purposes via a PC or for future recorder software upgrades. The port shall also be used for connection of recommended Bosch G series intrusion control panels.
- O. ATM/POS transaction data may be recorded and viewed if the digital video recorder specified is connected to an ATM/POS device via an ATM/POS bridge unit and has a license installed. The position, duration, text intensity, and font size of the ATM/POS data displayed on the CCTV monitor shall be selectable and may be switched on or off.
- P. Internet Explorer shall provide access to the DVR to view live action or playback of archived events without special software or tools.
- Q. The DVR specified shall be supplied as a desktop unit, but may be rack mounted using a rack mount kit supplied with the recorder.

2.04 CAMERA CONTROL SPECIFICATIONS

- A. The DVR shall provide five (5) Bosch biphasic control code outputs that are compatible with Bosch Allegiant Series Receiver/Driver units to provide remote camera pan, tilt, and zoom control. The biphasic code outputs may also be directly connected to Bosch AutoDome series cameras.
- B. The DVR shall provide the capability to communicate with Bosch Bilinx capable cameras allowing the camera to be directly configured from the DVR via the coaxial video cable.
- C. The DVR shall have a loop-through Keyboard In and Out connection to allow interconnection of up to thirty (30) of the specified recorder units when using a Bosch KBD-DIGITAL keyboard.
- D. Up to sixteen (16) of the specified digital video recorders may be interfaced using the Bosch Video Manager System to provide full system functionality for 256 cameras.

2.05 ALARM HANDLING SPECIFICATIONS

- A. The DVR shall provide, but not be limited to, the following alarm handling capability upon activation of normally open or normally closed alarm system contacts, video loss, or motion detection:
 - 1) The main monitor shall highlight the alarmed video in its full or multi-screen display and provides alarm, motion, or video loss warnings as appropriate. The secondary spot monitor output shall provide a full-screen display of an alarm or sequence multiple alarmed camera(s) as preprogrammed.
 - 2) A pre-event function shall record up to 30 seconds of the video that occurred prior to the activation of an alarm.
 - 3) Controllable camera(s) shall move automatically to pre-programmed pre-

positions.

- 4) Automatically activate 1 of 6 preprogrammed system configuration profiles that will determine system behavior for the current alarms.
- 5) Activates up to four (4) output relay(s), if programmed.
- 6) Activates an audible alarm (beeper) and flashes a front panel icon associated with the type of alarm that is active.
- 7) Up to four (4) inputs may be configured to record and automatically protect video clips upon the activation of an alarm input.
- 8) Select the DVR setting to allow alarms to be automatically or manually acknowledged.

2.06 NETWORK SPECIFICATIONS

- A. The DVR shall be fully compatible with any standard 10/100 Base T Ethernet port for networking capability.
- B. As a security feature, when connected via a network, the DVR shall allow the programming of eight (8) separate ranges of IP addresses that will restrict access to the local unit to only those IP ranges specified.

2.07 OPTIONAL KEYBOARD SPECIFICATIONS

- A. The optional Bosch KBD-DIGITAL keyboard shall be compatible with the specified DVR and provide full-function system control including video switching and remote camera control using an integral joystick.
- B. The keyboard shall provide access to the DVR to allow navigation of the recorder's on-screen menus.

2.08 OPTIONAL DIGITAL VIDEO DISK ARRAYS SPECIFICATIONS

- A. An optional Bosch DVAS Digital Video Disk Array may be connected via the SCSI port and is compatible with the digital video recorder specified and shall provide, but, not be limited to the following features:
 - 1) Up to 3.9 terabytes of video storage provides RAID 5 protection even if a hard drive completely fails.
 - 2) Hard drives, power supply, and controller board are modular components improving serviceability and minimizing down time.
 - 3) Accommodates up to 14 hot-swappable disk drives.
 - 4) Configurable as a hot spare that automatically rebuilds the data from a failed drive to minimize the time the array would be functioning without RAID 5 protection.
 - 5) Array accommodates two (2) digital video recorders.
 - 6) Three (3) year warranty covers disk array and hard drives.
- B. The optional Bosch DVAD Digital Video Disk Array may be connected via the SCSI port and is compatible with the digital video recorder specified and shall provide, but not be limited to, the following features:
 - 1) Available up to 1.2 TB of video storage per unit up to a maximum of 17TB.
 - 2) Provides real time drive activity and status indicators visible on the front panel.
 - 3) Three (3) year warranty covers the disk array and hard drives.

2.09 CONTROL CENTER SOFTWARE APPLICATION

- A. A Control Center Software (CC) program installed and running in a remote PC either via a 10/100 Base T Ethernet connection or directly via an RS232 serial connection provides a graphics display allowing full remote control of the specified digital video recorder. Up to six users shall be allowed access to any compatible recorder connected to the network.

- B. The CC software provides live and recorded video viewing from multiple DVRs at the same time.
- C. The CC software allows search, playback, and authentication of recorded video. Search and playback shall have the capability to be password protected.
- D. The CC software provides a Smart Motion Search feature that allows designated areas of a picture to be searched for motion.
- E. The CC software provides remote pan, tilt, and zoom control including pre-position, PTZ speed, and auxiliary control of the specified recorder manufacturer's cameras. Camera control P/T/Z functions may be executed by the mouse pointer from within the active cameo display (InWinPTZ).
- F. The CC software provides a snapshot mode that captures still images from the active display and saves them in bitmap format (.bmp) to the workstation's PC hard disk drive.
- G. Video storage to the workstation PC hard disk drive shall be in the digital video recorder's native format to keep its proof of authenticity.
- H. Video exporting to PC hard disk drive shall be in generic .AVI format to allow viewing on other workstation PCs when authentication is not necessary.
- I. Provides On-line status overview of connected specified digital recorder.
- J. The CC software provides access to a system configuration tool that is restricted to the system administrator and is password protected.
- K. The CC software allows search filters to search for recordings of ATM/POS transactions based on text strings. From the results of the search, recorded video may be selected for playback, protected, checked for authenticity, archived, or exported. ATM/POS transaction data of a selected DVR may be viewed, recorded, and searched only when using the proper ATM/POS bridge unit and license.
- L. The CC software provides an instant playback function that plays the recorded video of a particular camera from one minute earlier.

2.10 Archive Player

- A. A video archive player shall be provided by the manufacturer to allow viewing and authentication of the video that was stored on the remote PC hard drive using the Control Center application. The archive player shall be automatically copied to the same directory as the stored video file.
- B. Still images may be captured from the full-screen display of a camera and saved to a PC hard drive in bitmap format. Snapshot resolution shall 720 x 484 pixels in NTSC and 720 x 576 pixels in PAL.

2.11 ELECTRICAL SPECIFICATIONS:

- A. The DVR shall meet or exceed the following specifications:
 - 1) Rated voltage: 100-240 VAC 50/60Hz.
 - 2) Video standard: Automatically configures itself as NTSC or PAL unit.

- 3) Video inputs: Composite video 0.5-2Vpp, 75 ohm, looping, auto-terminating BNC connectors.
- 4) Outputs: 1Vpp, 75 ohm.
- 5) Bi-Phase Control: Impedance 128 ohm, Maximum cable length 1 mile 1.5km).
- 6) Recording Resolution: NTSC: 720 x 242 PAL: 720 x 576
- 7) AGC: Automatic or manual adjustment for each video input.
- 8) Digital zoom: 2 or 4 times
- 9) Compression: Wavelet

2.12 MECHANICAL SPECIFICATIONS:

- A. The DVR is rack mountable in an industry standard EIA 19-inch rack using the supplied rack mount kit, or it may be installed as a desktop unit.
- B. Dimensions: 442 x 315 x 66 mm (17.4 x 12.4 x 2.6 inch)
- C. Weight: Approximately 16.5 lbs (7.5 kg).

2.13 ENVIRONMENTAL SPECIFICATIONS:

- A. Temperature: Operating: +5°C to +40°C (+41°F to +104°F)
- B. Relative Humidity: Operating: <93% non-condensing.

2.14 ELECTROMAGNETIC COMPATIBILITY

- A. USA: FCC Part 15, Class B.
- B. Europe:
 - 1) EMC Directive 89/336/EEC
 - 2) Immunity: EN50130-4
 - 3) Emission: EN55022 Class B
 - 4) Mains Harmonics: EN61000-3-2
 - 5) Voltage fluctuations: EN61000-3-3

2.15 SAFETY

- A. USA: UL6500 2nd edition
- B. Europe: EN60950:2000
- C. Canada: CAN/CSA-E60065-00

The product specified shall be the Bosch Divar Digital Video Recorder Models DVR6H, DVR9H, or DVR16H Series, as required by the application, manufactured by Bosch Security Systems.

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